

Attorney Docket: 64098-0844 (AP9265)
S.N.: 09/701,910



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REMARKS

I. Introduction

Applicant has reviewed the detailed Final Office Action mailed 4/26/02 (Paper No. 10). No new claims have been added. Thus, claims 12-22 are pending. Applicant thanks the Examiner for granting an Examiner's interview with Applicant's representative on June 25, 2002. In summary, the Examiner indicated in the interview that: (1) Applicant should present prior art showing the concept of reducing the counterforce and/or the damping effect on a brake pedal to overcome the §112 rejection; (2) Feigel does not teach, suggest or disclose a device or method for reducing a damping effect or a counterforce on a brake pedal; and (3) Feigel does not teach, suggest or disclose a device or method for changing a brake force acting in the system as a function of at least one of an actuating travel of a brake pedal, an actuating speed of the brake pedal and an acceleration of actuation of the brake pedal when a brake assist function is activated. Applicant requests reconsideration of the pending claims in view of the following remarks.

II. Objection to the Specification

The Examiner objected to the specification under 37 CFR 1.71 for failing to describe "any damping means or method." Applicant respectfully disagrees. The second paragraph of the "Detailed Description of the Preferred Embodiments," on page 4 of the specification, describes the components of brake pedal 1 as including a static portion (spring) and a speed-responsive portion (damping effect). Minimizing or reducing the damping effect on a brake pedal may be accomplished by varying the hydraulic effective cross section of the brake pedal, as described in the second paragraph on page 4 and also in the first full paragraph on page 6 of the specification. Accordingly, withdrawal of the objection is respectfully requested.

III. Rejections under 35 U.S.C. § 112, first paragraph

The Examiner rejected claims 12-22 under 35 U.S.C. § 112, first paragraph, as non-enabling. The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art

without undue experimentation. *U.S. v. Telectronics, Inc.*, 857 F.2d. 778 (Fed. Cir. 1988). A patent need not teach, and preferably omits, what is well known in the art. *In re Buchner*, 929 F. 2d. 660, 661 (Fed. Cir. 1991). At least three factors evidence that the Applicant has provided an enabling disclosure include: (1) Applicant has provided considerable direction and guidance in the form of an exemplary method of minimizing the damping effect on a brake pedal by varying the hydraulic effective cross section of the brake pedal; (2) the exemplary method of minimizing the damping effect on a brake pedal by varying the hydraulic effective cross section of the brake pedal is known in the art; and (3) there was a high level of skill in the art of brake systems at the time the application was filed.

Regarding the first and second factors, the scope of the required enablement varies inversely with the degree of predictability involved, but even in unpredictable arts, a disclosure of every operable species is not required. A single embodiment may provide broad enablement in cases involving predictable factors, such as mechanical or electrical elements. *In re Vickers*, 141 F. 2d. 522 (CCPA 1944). The Examiner requested during the Examiner's interview on June 25 that Applicant provide prior art showing that the concept of reducing the counterforce and/or damping effect was known in the art. Applicant submits herewith U.S. Patent No. 6,109,703 which discusses a brake operation detecting unit that causes fluid pressure from a master cylinder in response to the braking operation to be accepted and absorbed by a volumetric variable chamber and simultaneously transmits proper counterforce to a brake pedal. *See, e.g.*, col. 3, lines 14-21.

Because, the exemplary method of varying the hydraulic effective cross section of a brake pedal is known in the art of brake systems, a person of ordinary skill in the art could make and use the claimed device without undue experimentation. Accordingly, claims 12-22 as amended are patentable and withdrawal of the § 112, first paragraph, rejection is respectfully requested.

IV. Rejections under 35 U.S.C. § 102

The Examiner rejected claims 12-22 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,099,086 to Feigel et al. ("Feigel"). For at least the following reasons, this rejection is respectfully traversed.

A. Firstly, the Examiner asserted in the Office Action that independent claims 12,

19, 20 and 22 are anticipated by Feigel, because Feigel discloses a “counter current weighting”. See Feigel, col. 4, lines 5-11. However, nowhere does Feigel teach, suggest or disclose a device or method for reducing a damping effect or a counterforce on a brake pedal, as recited by the Applicant in independent claims 12, 19, 20 and 22. Rather, Feigel is clearly directed to solving the problem of *signal noise* in a set point generator for control of an electrically controlled brake system.

More particularly, in column 1, lines 27-35 of Feigel, we read “it is to be regarded as a disadvantage of the known set point generator that, particularly for exceptionally small signals, the random noise is in the order of magnitude of the signals and thereby distorts them.” The paragraph goes on to state that traditional approaches for filtering noise have the associated draw back of negatively influencing the time response of the electronic circuits involved.

The thrust of the Feigel patent is minimizing *signal noise* by utilizing multiple sensors and assigning weights to the output signals of multiple sensors in dependence of the output signals of other sensors. The Feigel patent clearly teaches that the signal to noise ratio of a sensor output is not constant but varies throughout the range of the sensor’s output signal. By recognizing this fact, a large weighting factor can be assigned to a signal when that signal is operating within a low signal to noise ratio portion of its operating range and a small weighting factor can be assigned to the output signal of the sensor when the sensor is operating within a high signal to noise ratio portion of its operating range. Furthermore, the set point generator utilizes the output signals by weighting them in the input circuits and summing up the corresponding partial set points to form a composite set point. Defined in Feigel as a “countercurrent weighting”, if a small force acts on the brake pedal, the pedal travel is dominant. However, as the pedal force grows, the latter is weighted more heavily. The term “weighted,” as used in the Feigel patent, is not used in a physical sense to describe a force; rather, the term is used to describe a bias or assignment of additional importance to an output signal. Accordingly, Feigel does not teach, suggest or disclose a device or method for actuating a brake system to accomplish a brake assist function that reduces at least one of a damping effect or a counterforce on a brake pedal, as claimed by the Applicant.

B. Secondly, unlike the Applicant’s claimed invention as recited in amended

claims 16 and 21, nowhere does Feigel teach or suggest a device or method for changing a brake force acting in the system as a function of at least one of an actuating travel of a brake pedal, an actuating speed of the brake pedal and an acceleration of actuation of the brake pedal when a brake assist function is activated. Although Feigel teaches the use of brake pedal travel or position for control of an electrically controlled brake system, Feigel does not teach changing a brake force as a function of actuating travel of the brake pedal when a brake assist function is activated. Moreover, nowhere does Feigel disclose or teach anything to do with a brake assist function.

Regarding claim 21, the excerpt from the Feigel specification cited by the Examiner, namely column 4, lines 5-11, merely teaches a “countercurrent weighting” wherein a dominant signal is weighted more heavily in the generation of the setpoint signal, as described above.

C. Similarly, Feigel does not anticipate the Applicant’s invention as recited in the dependent claims. For example, regarding amended claims 13 and 15, nowhere does Feigel disclose a device or method for reducing a damping effect or a counterforce on a brake pedal wherein the damping effect and counterforce depend on at least one of brake pedal travel, the speed of brake pedal actuation and the acceleration of brake pedal actuation. Moreover, nowhere does Feigel teach reducing the damping effect or counterforce when at least one of the sensed brake pedal travel, the speed of brake pedal actuation and the acceleration of brake pedal actuation exceed a threshold value.

Claims 12-22 are therefore patentable, and withdrawal of the § 102(e) rejection is respectfully requested.

V. Conclusion

For at least the above reasons, Applicant respectfully submits that the present invention, as claimed, is patentable over the prior art. If the Examiner has any issues that he believes can be expedited by a telephone conference, he is encouraged to telephone the undersigned representative at his earliest convenience.

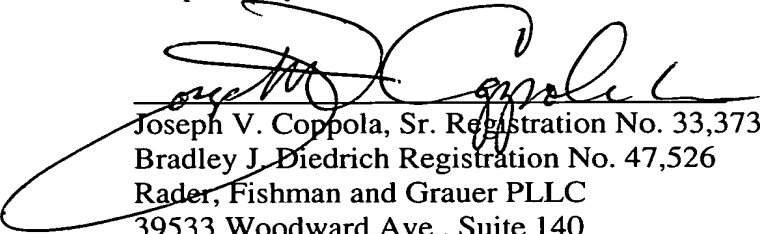
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Respectfully submitted,

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